Weight of Evidence vs. Independent Application:
Ohio's Perspectives

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Aquatic Bioassessments by Ohio EPA
The Integrated Biosurvey

Where

- Mainly rivers, streams and small waterways
- Lake Erie, inland lakes and wetlands

What

- Fish, macroinvertebrates, physical habitat
- Water quality, sediments, fish contamination

Why

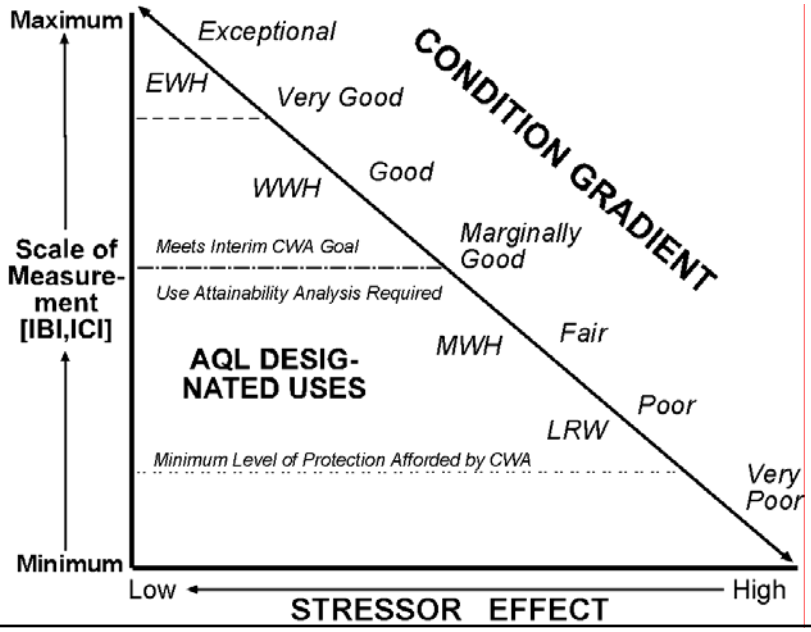
- Provide empirical information for water quality management and decision making
- Determine status of Ohio's aquatic resources
- Assure that waters are correctly classified

Ohio TALUs

Based on biological assemblage attributes:

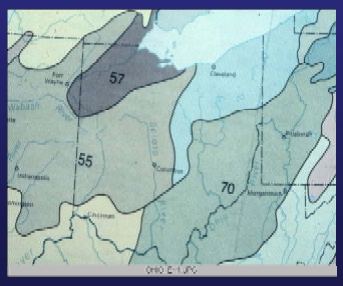
- ***Exceptional Warmwater Habitat*** - ***preserve*** & maintain existing high quality.
- ***Warmwater Habitat*** – the baseline ***restoration*** goal for most streams and rivers *("default" use).*
- ***Modified Warmwater Habitat*** - ***best attainable*** condition for streams under drainage maintenance or other irreversible hydromodification.
- ***Limited Resource Waters*** – ***irretrievable*** human induced conditions (e.g., virtual elimination of habitat).

Ohio's TALUs and the BCG



Ohio Biological Criteria

- Fish (IBI, MIwb) and macroinvertebrates (ICI)
- Criteria vary by use designation and ecoregion
- 400+ Reference sites
- Adopted into Ohio Standards in 1990



Ohio Biological Criteria

(OAC 3745-1-07; Table 7-15)

Huron Erie Lake Plain (HELP)

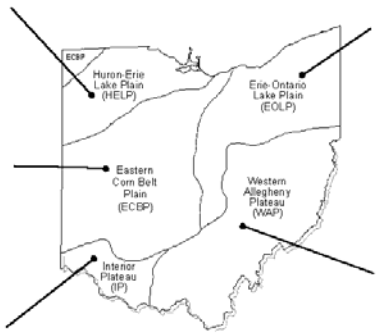
Use	Size	IBI	MIwb	ICI
WWH	H	28	NA	34
	W	32	7.3	34
	B	34	8.6	34
MWH-C	H	20	NA	22
	W	22	5.6	22
	B	20	5.7	22
MWH-I	B	30	5.7	NA

Eastern Corn Belt Plains (ECBP)

Use	Size	IBI	MIwb	ICI
WWH	H	40	NA	36
	W	40	8.3	36
	B	42	8.5	36
MWH-C	H	24	NA	22
	W	24	6.2	22
	B	24	5.8	22
MWH-I	B	30	6.6	NA

Interior Plateau (IP)

Use	Size	IBI	MIwb	ICI
WWH	H	40	NA	30
	W	40	8.1	30
	B	38	8.7	30
MWH-C	H	24	NA	22
	W	24	6.2	22
	B	24	5.8	22
MWH-I	B	30	6.6	NA



Erie Ontario Lake Plain (EOLP)

Use	Size	IBI	MIwb	ICI
WWH	H	40	NA	34
	W	38	7.9	34
	B	40	8.7	34
MWH-C	H	24	NA	22
	W	24	6.2	22
	B	24	5.8	22
MWH-I	B	30	6.6	NA

Western Allegheny Plateau (WAP)

Use	Size	IBI	MIwb	ICI
WWH	H	44	NA	34
	W	44	8.4	34
	B	40	8.6	34
MWH-C	H	24	NA	22
	W	24	6.2	22
	B	24	5.8	22
MWH-A	H	24	NA	30
	W	24	5.5	30
	B	24	5.5	30
MWH-I	B	30	6.6	NA

Statewide Exceptional Criteria

Use	Size	IBI	MIwb	ICI
EWH	H	50	NA	46
	W	50	9.4	46
	B	48	9.6	46

Excerpt from Ohio WQS
(OAC 3745-1-07)

(6) Biological criteria presented in table 7-15 of this rule provide a direct measure of attainment of the warmwater habitat, exceptional warmwater habitat and modified warmwater habitat aquatic life uses. Biological criteria and the exceptions to chemical-specific or whole-effluent criteria allowed by this paragraph do not apply to any other use designations.

(a) Demonstrated attainment of the applicable biological criteria in a water body will take precedence over the application of selected chemical-specific aquatic life or whole-effluent criteria associated with these uses when the director, upon considering appropriately detailed chemical, physical and biological data, finds that one or more chemical-specific or whole-effluent criteria are inappropriate. In such cases the options which exist include:

(i) The director may develop, or a discharger may provide for the director's approval, a justification for a site-specific water quality criterion according to methods described in "Water Quality Standards Handbook, 1983, U.S. EPA Office of Water";

(ii) The director may proceed with establishing water quality based effluent limits consistent with attainment of the designated use.

Ohio WQS (Cont.)

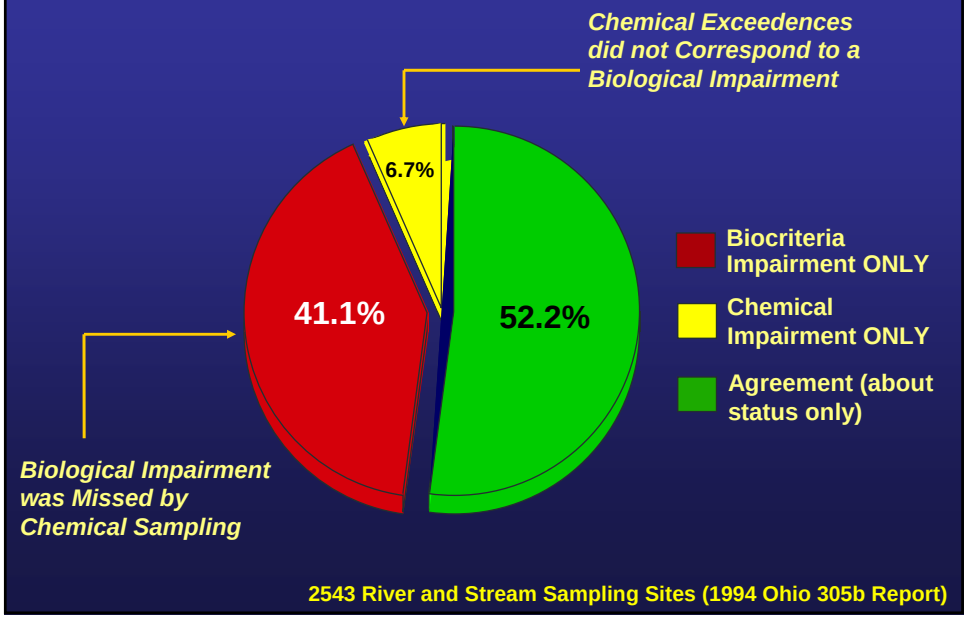
(b) Demonstrated nonattainment of the applicable biological criteria in a water body with concomitant evidence that the associated chemical-specific aquatic life criteria and whole-effluent criteria are met will cause the director to seek and establish, if possible, the cause of the nonattainment of the designated use. The director shall evaluate the existing designated use and, where not attainable, propose to change the designated use. Where the designated use is attainable and the cause of the nonattainment has been established, the director shall, wherever necessary and appropriate, implement regulatory controls or make other recommendations regarding water resource management to restore the designated use. Additional regulatory controls shall not be imposed on point sources that are meeting all applicable chemical-specific and whole-effluent criteria unless:

(i) The point sources are shown to be the primary contributing cause of the nonattainment;

(ii) The application of additional or alternate treatment or technology can reasonably be expected to lead to attainment of the designated use; and

(iii) The director has given due consideration to the factors specified in division (J) of section 6111.03 of the Revised Code.

What are the consequences?



2543 River and Stream Sampling Sites (1994 Ohio 305b Report)

Leading Causes of Impairment

- Physical habitat alterations
- Hydromodifications
- Siltation
- Organic enrichment
- Nutrients

Questions?